

LPDES PERMIT NO. LA0053708, AI No. 336

LPDES STATEMENT OF BASIS

FOR THE DRAFT LOUISIANA POLLUTANT DISCHARGE ELIMINATION SYSTEM
(LPDES) PERMIT TO DISCHARGE TO WATERS OF LOUISIANA

- I. Company/Facility Name:** Air Liquide Large Industries U.S. LP
Lake Charles Air Separation Plant
3900 Highway 27 South
Sulphur, Louisiana 70665
- II. Issuing Office:** Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services
Post Office Box 4313
Baton Rouge, Louisiana 70821-4313
- III. Prepared By:** Jenniffer Sheppard
Level 1 Industrial Permits Section
Permits Division
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Date Prepared: January 17, 2008

IV. Permit Action/Status:

A. Reason For Permit Action:

Proposed reissuance of an existing Louisiana Pollutant Discharge Elimination System (LPDES) permit for a 5-year term following regulations promulgated at LAC 33:IX.2711/40 CFR 122.46.

- * In order to ease the transition from NPDES to LPDES permits, dual regulatory references are provided where applicable. The LAC references are the legal references while the 40 CFR references are presented for informational purposes only. In most cases, LAC language is based on and is identical to the 40 CFR language. 40 CFR Parts 401, and 405-471 have been adopted by reference at LAC 33:IX.4903 and will not have dual references. In addition, state standards (LAC Chapter 33:IX.11) will not have dual references.

LAC 33:IX Citations: Unless otherwise stated, citations to LAC 33:IX refer to promulgated regulations listed at Louisiana Administrative Code, Title 33, Part IX.

40 CFR Citations: Unless otherwise stated, citations to 40 CFR refer to promulgated regulations listed at Title 40, Code of Federal Regulations in accordance with the dates specified at LAC 33:IX.4901, 4903, and 2301.F.

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- B. NPDES permit - NPDES permit effective date: N/A
 NPDES permit expiration date: N/A
 EPA has not retained enforcement authority.
- C. LPDES permit - Individual LPDES Permit
 LPDES permit effective date: May 1, 2003
 LPDES permit expiration date: April 30, 2008

 LPDES Minor Permit Modification effective date: April 1, 2004

LAR05N038 - MSGP
 LPDES permit effective date: May 24, 2006
 LPDES permit expiration date: April 30, 2011
- D. Application received on October 17, 2007. Additional information received by e-mail on January 18, 2008.

V. Facility Information:

- A. Location - 3900 Highway 27 South, in Sulphur
- B. Applicant Activity -

 According to the application, Air Liquide Large Industries U.S. LP, Lake Charles Air Separation Plant, is an ambient air separation plant that produces pure oxygen, nitrogen, and argon by cryogenically distilling atmospheric air.

 Stormwater is covered under the Multi-Sector General Permit (MSGP), LAR05N038, effective on May 24, 2006.
- C. Technology Basis

 Louisiana Water Quality Management Plan for Sanitary Dischargers.
 LDEQ Sanitary General Permits
 Best Professional Judgement
- D. Fee Rate -
 1. Fee Rating Facility Type: minor
 2. Complexity Type: II
 3. Wastewater Type: III
 4. SIC code: 2813
- E. Continuous Facility Effluent Flow - 0.029808 MGD.

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VI. Receiving Waters: Bayou D'Inde via local drainage

1. River Basin: Calcasieu River, Segment No. 030901
2. Designated Uses:
The designated uses are primary contact recreation, secondary contact recreation, and fish and wildlife propagation.

VII. Outfall Information:

Outfall 001

- A. Type of wastewater - the discharge of previously monitored discharges from Internal Outfalls 101, 201, and 301.
- B. Location - at the point of discharge of the surface drainage on the fence line in the northwest corner of the property, prior to combining with waters of Bayou D'Inde via local drainage, at Latitude 30°11'64", Longitude 93°22'81".
- C. Treatment - None
- D. Flow - Intermittent, (Estimated Flow) 0.029808 MGD.
- E. Receiving waters - Bayou D'Inde via local drainage
- F. Basin and segment - Calcasieu River Basin, Segment 030901

Internal Outfall 101

- A. Type of wastewater - the discharge of cooling tower blowdown.
- B. Location - at the point of discharge from the cooling tower, prior to combining with other waters at Final Outfall 001, at Latitude 30°11'64", Longitude 93°22'81".
- C. Treatment - treatment of cooling tower blowdown consists of:
- chemical treatment
- D. Flow - Intermittent, (Estimated Flow) 0.028800 MGD.
- E. Receiving waters - Local drainage, thence to Bayou D'Inde via Final Outfall 001.
- F. Basin and segment - Calcasieu River Basin, Segment 030901

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Internal Outfall 201

- A. Type of wastewater - the discharge of wastewater from floor drains, washwater, and compressor blowdown.
- B. Location - at the point of discharge from the oil water separator, prior to combining with any other waters at Final Outfall 001, at Latitude 30°11'58", Longitude 93°22'80".
- C. Treatment - treatment of wastewater consists of:
 - oil water separator
- D. Flow - Intermittent, (Estimated Flow) 0.000720 MGD.
- E. Receiving waters - Local drainage, thence to Bayou D'Inde via Final Outfall 001.
- F. Basin and segment - Calcasieu River Basin, Segment 030901

Internal Outfall 301

- A. Type of wastewater - the discharge of treated sanitary wastewater.
- B. Location - at the point of discharge from the extended aeration unit, prior to combining with any other waters at Final Outfall 001, at Latitude 30°11'59", Longitude 93°22'80".
- C. Treatment - treatment of sanitary wastewaters consists of:
 - extended aeration treatment system
- D. Flow - Intermittent, (Estimated Flow) 0.000288 MGD.
- E. Receiving waters - Local drainage, thence to Bayou D'Inde via Final Outfall 001.
- F. Basin and segment - Calcasieu River Basin, Segment 030901

VIII. Proposed Permit Limits:

The specific effluent limitations and/or conditions will be found in the draft permit. Development of permit limits are detailed in the Permit Limit Rationale section below.

Summary of Proposed Changes From the Current LPDES Permit:

- A. Outfall 001 - Total Copper and Total Mercury daily maximum limits have been added based on the Upper Calcasieu Estuary TMDL issued in the Federal Register on June 13, 2002. The monitoring frequency for both parameters is 1/quarter in accordance with the TMDL requirements.
- B. Internal Outfall 101 - Limitations for Oil & Grease increased due to an increase in oxygen production from 350,000 std.ft³/hour to 400,000 std.ft³/hour. The production for Nitrogen, 900,000 std.ft³/hour did not change. See Part IX, Permit Rationale for calculations.

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- C. Internal Outfall 101 - The applicant requested that the monitoring frequencies for Oil & Grease, Total Residual Chlorine, and pH be reduced based on its historical compliance performance. This request has been granted. Based on compliance history and in accordance with the requirements stated in the USEPA Memorandum "Interim Guidance for Performance Based Reductions of NPDES Permit Monitoring Frequencies," the measurement frequencies for Oil & Grease, Total Residual Chlorine, and pH have been changed from 1/month to 1/quarter.
- D. Internal Outfall 201 - The applicant requested that the monitoring frequencies for COD, Oil & Grease, TSS, and pH be reduced based on its historical compliance performance. This request has been granted. Based on compliance history and in accordance with the requirements stated in the USEPA Memorandum "Interim Guidance for Performance Based Reductions of NPDES Permit Monitoring Frequencies," the measurement frequencies for COD, Oil & Grease, TSS, and pH have been changed from 1/month to 1/quarter.

IX. Permit Limit Rationale:

The following section sets forth the principal facts and the significant factual, legal, methodological, and policy questions considered in preparing the draft permit.

1. Outfall 001 - the discharge of previously monitored discharges from Internal Outfalls 101, 201, and 301.

The combined outfall contains the following limitations and monitoring requirements:

<u>PARAMETER</u>	<u>MONTHLY AVERAGE LBS/DAY</u>	<u>DAILY MAXIMUM LBS/DAY</u>	<u>MONITORING FREQUENCY</u>
Flow (MGD)	Report	Report	1/month
Total Copper	---	0.0022900	1/quarter
Total Mercury	---	0.0000157	1/quarter

Site-Specific Consideration(s) for Outfall 001

Flow - established in accordance with LAC 33:IX.2707.I.1.b. Flow shall be monitored 1/month. This requirement has been retained from the current LPDES permit, effective on May 1, 2003.

Total Copper and Total Mercury - limitations and monitoring frequencies were established in accordance with the Upper Calcasieu Estuary TMDL issued in the Federal Register on June 13, 2002.

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PH - monitoring was not established for this parameter since pH is monitored at each internal outfall.

2. Internal Outfall 101 - the discharge of cooling tower blowdown.

Cooling tower blowdown discharges receive the following limitations and monitoring requirements:

<u>PARAMETER</u>	<u>MONTHLY AVERAGE</u>	<u>DAILY MAXIMUM</u>	<u>MONITORING FREQUENCY</u>
Flow (MGD)	Report	Report	1/month
Temperature (°F)	Report	Report	1/month
Oil and Grease	2.36 lbs/day	4.72 lbs/day	1/quarter
Total Residual Chlorine	---	0.2 mg/L	1/quarter
pH (s.u.)	6.0	9.0	1/quarter

Site-Specific Consideration(s) for Internal Outfall 101

Flow - established in accordance with LAC 33:IX.2707.I.1.b. Flow shall be monitored 1/month. This requirement has been retained from the current LPDES permit, effective on May 1, 2003.

Temperature - This requirement has been retained from the current LPDES permit, effective on May 1, 2003. The monitoring frequency of 1/month has also been retained.

Total Residual Chlorine - This limitation has been retained from the current LPDES permit, effective on May 1, 2003 and was based on the requirements in the Light Commercial General Permit. The monitoring frequency has been reduced from 1/month to 1/quarter based on compliance history and in accordance with the requirements stated in the USEPA Memorandum "Interim Guidance for Performance Based Reductions of NPDES Permit Monitoring Frequencies."

PH - established in accordance with LAC 33:IX.1113.C.1. The monitoring frequency has been reduced from 1/month to 1/quarter based on compliance history and in accordance with the requirements stated in the USEPA Memorandum "Interim Guidance for Performance Based Reductions of NPDES Permit Monitoring Frequencies."

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Oil & Grease - limitation basis has been retained from the current LPDES permit, effective on May 1, 2003. This was based on the BCT EPA Guidelines at 40 CFR Part 415, Subpart AW. The BCT guideline established here is 0.001 pounds O&G/1000 pounds production (Monthly Average) and 0.002 pounds O&G/1000 pounds production (Daily Maximum). Air Liquide's oil and grease limits were established as follows:

Oxygen Production

$400,000 \text{ std.ft}^3/\text{hour} * \text{lb}/12.076 \text{ hours} * 24 \text{ hours/day} = 794,965 \text{ lbs/day}$

Nitrogen Production

$900,000 \text{ std.ft}^3/\text{hour} * \text{lb}/13.803 \text{ hours} * 24 \text{ hours/day} = 1,564,877 \text{ lbs/day}$

Total Production

$794,965 \text{ lbs/day (oxygen)} + 1,564,877 \text{ lbs/day (nitrogen)} = 2,359,842 \text{ lbs/day}$

Monthly Average Oil & Grease Limit

$0.001 \text{ lb O\&G} * 2,359,842 \text{ lbs/day product}/1,000 = 2.36 \text{ lbs/day}$

Daily Maximum Oil & Grease Limit

$0.002 \text{ lb O\&G} * 2,359,842 \text{ lbs/day product}/1,000 = 4.72 \text{ lbs/day}$

The monitoring frequency for Oil & Grease has been reduced from 1/month to 1/quarter based on compliance history and in accordance with the requirements stated in the USEPA Memorandum "Interim Guidance for Performance Based Reductions of NPDES Permit Monitoring Frequencies."

3. Internal Outfall 201 - the discharge of wastewater from floor drains, washwater, and compressor blowdown.

These discharges receive the following limitations and monitoring requirements:

<u>PARAMETER</u>	<u>MONTHLY AVERAGE MG/L</u>	<u>DAILY MAXIMUM MG/L</u>	<u>MONITORING FREQUENCY</u>
Flow (MGD)	Report	Report	1/month
COD	---	100	1/quarter
Oil and Grease	---	15	1/quarter
TSS	---	45	1/quarter
pH (s.u.)	6.0	9.0	1/quarter

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Site-Specific Consideration(s) for Internal Outfall 201

Flow - established in accordance with LAC 33:IX.2707.I.1.b. Flow shall be monitored 1/month. This requirement has been retained from the current LPDES permit, effective on May 1, 2003.

COD - This limitation has been retained from the current LPDES permit, effective on May 1, 2003. The monitoring frequency has been reduced from 1/month to 1/quarter based on compliance history and in accordance with the requirements stated in the USEPA Memorandum "Interim Guidance for Performance Based Reductions of NPDES Permit Monitoring Frequencies."

Oil & Grease - This limitation has been retained from the current LPDES permit, effective on May 1, 2003. The monitoring frequency has been reduced from 1/month to 1/quarter based on compliance history and in accordance with the requirements stated in the USEPA Memorandum "Interim Guidance for Performance Based Reductions of NPDES Permit Monitoring Frequencies."

TSS - This limitation has been retained from the current LPDES permit, effective on May 1, 2003. The monitoring frequency has been reduced from 1/month to 1/quarter based on compliance history and in accordance with the requirements stated in the USEPA Memorandum "Interim Guidance for Performance Based Reductions of NPDES Permit Monitoring Frequencies."

PH - established in accordance with LAC 33:IX.1113.C.1. The monitoring frequency has been reduced from 1/month to 1/quarter based on compliance history and in accordance with the requirements stated in the USEPA Memorandum "Interim Guidance for Performance Based Reductions of NPDES Permit Monitoring Frequencies."

4. Internal Outfall 301 - the discharge of treated sanitary wastewater.

Sanitary wastewaters (internal or external) are regulated in accordance with LAC 33:IX.711 or 709.B, by BPJ utilizing the sanitary general permits issued by this Office. Concentration limits are used in accordance with LAC 33:IX.2707.F.1.b which states that mass limitations are not necessary when applicable standards and limitations are expressed in other units of measurement. LAC 33:IX.709.B references LAC 33:IX.711 which express BOD₅ and TSS in terms of concentration.

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<u>PARAMETER</u>	<u>MONTHLY AVERAGE MG/L</u>	<u>DAILY MAXIMUM MG/L</u>	<u>MONITORING FREQUENCY</u>
Flow (MGD)	Report	Report	1/month
BOD ₅	---	45	1/6 months
TSS	---	45	1/6 months
Fecal Coliform	---	400 colonies/100 ml	1/6 months
pH (s.u.)	6.0	9.0	1/6 months

Site-Specific Consideration(s) for Internal Outfall 301

Flow - established in accordance with LAC 33:IX.2707.I.1.b. Flow shall be monitored 1/month. This requirement has been retained from the current LPDES permit, effective on May 1, 2003.

PH - established in accordance with LAC 33:IX.1113.C.1. PH shall be monitored 1/6 months. This requirement has been retained from the current LPDES permit, effective on May 1, 2003.

BOD₅, TSS, and Fecal Coliform - These limitations have been retained from the current LPDES permit, effective on May 1, 2003 and was established in accordance with the Class I Sanitary General Permit, LAG530000. The monitoring frequencies have also been retained from the current LPDES permit.

A. WATER QUALITY-BASED EFFLUENT LIMITATIONS

The following pollutants received water quality based effluent limits:

<u>POLLUTANT(S)</u>
Total Copper
Total Mercury

Minimum quantification levels (MQL's) for state water quality numerical standards-based effluent limitations are set at the values listed in the Permitting Guidance Document for Implementing Louisiana Surface Water Quality Standards, LDEQ, September 27, 2001.

To demonstrate compliance with the waste load allocations (WLAs) established in the Calcasieu Estuary TMDL for Toxics, in addition to protecting against the potential for

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discharges of the TMDL pollutants, Total Copper and Total Mercury were present at levels above that of state water quality standards. For discharges of Total Copper and Total Mercury at levels exceeding state water quality standards, site specific MQL's were developed.

Should an EPA approved test method not be available to achieve the stated detection level, then the most sensitive EPA approved method is required, and the permittee can record zero or a less than value on the DMR in the event of any analytical result that is less than the most sensitive reporting limit.

$$\text{MQL (mg/L)} = \frac{\text{TMDL assigned Loading for Chemical X}}{\text{Flow used in TMDL} \times 8.34 \text{ conversion factor}}$$

$$\text{MQL } (\mu\text{g/L}) = \text{MQL (mg/L)} \times 1000$$

<u>COMPOUNDS</u>	<u>TMDL LOADING (LBS/DAY)</u>	<u>FLOW (MGD)</u>	<u>CONVERSION FACTOR</u>	<u>MQL DETECTION LIMIT $\mu\text{g/L}$</u>
Total Copper	0.0022900	0.03	8.34	9.15
Total Mercury	0.0000157	0.03	8.34	0.06

TMDL Waterbodies

Outfall 001

The discharges from Outfall 001 include cooling tower blowdown, floor drain, washwater, compressor blowdown, and sanitary wastewater are to Bayou D'Inde via local drainage, Segment No. 030901. Bayou D'Inde was not listed on the 2004 303(d) list of impairments due to the Upper Calcasieu Estuary Toxics TMDL being issued June 13, 2002 and the Dissolved Oxygen TMDL issued in July 1, 2002. These TMDLs addressed Copper, Mercury, Priority Organics, and Dissolved Oxygen impairments.

Copper, Mercury, and Priority Organics

The TMDL for Toxics for the Calcasieu Estuary was finalized on June 13, 2002, addressing the presence of toxic substances, including Copper, Mercury, and Priority Organics in the watershed. The applicant's facility received the following limitations/requirements in this TMDL at Outfall 001:

<u>PARAMETER</u>	<u>MONTHLY AVERAGE LBS/DAY</u>	<u>DAILY MAXIMUM LBS/DAY</u>
Total Copper	---	0.0022900
Total Mercury	---	0.0000157

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The TMDL did not establish limitations Air Liquide in reference to the priority organics impairment.

Organic Enrichment/Low DO

A TMDL for this waterbody was completed July 1, 2002 for the DO impairment. No waste load allocations were assigned due to this waterbody meeting the water quality criterion at the existing loads. Since biochemical oxygen demand (BOD₅), and chemical oxygen demand (COD) are parameters that could cause or contribute to further impairment of this waterbody, the effluent limitations are proposed based on existing loads without increment.

A reopener clause will be established in the permit to include more stringent limits based on final loading allocations in the completed and approved TMDL.

Site-Specific Consideration(s)

Federal regulations under 40 CFR 130.7 require the State to incorporate all final TMDLs into its current Water Quality Management Plan (WQMP). The State is also required to ensure consistency with the WQMP requirements approved by EPA under Section 208(b) of the Clean Water Act (CWA), as cited under LAC 33.IX.2707.D.6. Since the requirements established in the Final TMDL (Federal Register Notice: Volume 67, Number 114, pages 40735 - 40737, 6/13/2002) are water quality-based effluent limitations that are part of the State's current Water Quality Management Plan (Volume 8), and are more stringent than the technology based effluent limitations, the TMDL waste load allocations must remain in the permit.

X. Compliance History/DMR Review :

A. DMR Excursions Reported

A DMR review was completed covering the period since the last inspection, July 27, 2005 through November 2007. No excursions were reported during this time.

B. Inspections - A Compliance Evaluation Inspection (CEI) was completed on July 27, 2005. The inspector noted that the facility was not able to accurately measure flow at Outfall 001 due to erosion near the outfall. On the same day as the inspection, the facility took measures to correct the problem.

C. Compliance History - None

XI. "IT" Questions - Applicant's Responses

IT Questions and Air Liquide Large Industries U.S. LP, Lake Charles Air Separation Plant's responses can be viewed in the LPDES renewal application, (page 27 of 29) received on October 17, 2007.

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XII. ENDANGERED SPECIES

The receiving waterbody, Subsegment 030901 of the Calcasieu River Basin is not listed in Section II.2 of the Implementation Strategy as requiring consultation with the U.S. Fish and Wildlife Service (FWS). This strategy was submitted with a letter dated October 24, 2007 from Boggs (FWS) to Brown (LDEQ). Therefore, in accordance with the Memorandum of Understanding between the LDEQ and the FWS, no further informal (Section 7, Endangered Species Act) consultation is required. It was determined that the issuance of the LPDES permit is not likely to have an adverse effect on any endangered or candidate species or the critical habitat. The effluent limitations established in the permit ensure protection of aquatic life and maintenance of the receiving water as aquatic habitat.

XIII. Historic Sites:

The discharge is from an existing facility location, which does not include an expansion on undisturbed soils. Therefore, there should be no potential effect to sites or properties on or eligible for listing on the National Register of Historic Places, and in accordance with the "Memorandum of Understanding for the Protection of Historic Properties in Louisiana Regarding LPDES Permits" no consultation with the Louisiana State Historic Preservation Officer is required.

XIV. Tentative Determination:

On the basis of preliminary staff review, the Department of Environmental Quality has made a tentative determination to permit for the discharge described in the application.

XV. Variances:

No requests for variances have been received by this Office.

XVI. Public Notices:

Upon publication of the public notice, a public comment period shall begin on the date of publication and last for at least 30 days thereafter. During this period, any interested persons may submit written comments on the draft permit and may request a public hearing to clarify issues involved in the permit decision at this Office's address on the first page of the statement of basis. A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing.

Public notice published in:

Local newspaper of general circulation

Office of Environmental Services Public Notice Mailing List